of trusses without benefit. At the desire of the patient, and after a consultation with his colleagues, MM. Rayer, Begin, and Cloquet, M. Jobert punctured the hernial sac, and injected the tincture of iodine into the tunica vaginalis. The patient was laid in the horizontal posture after the operation; his legs were flexed on his thighs, and maintained in this position by means of a bolster. The hernial sac swelled immediately after the injection, and in fifteen hours it was as large as the hernial tumour, and had a fluctuating, half-solid feeling. The parts continued thus for eight days, and then the swelling speedily diminished. On the twenty-eighth day after the operation the cure was complete; the track of the spermatic cord was occupied by a hard and compact cylindrical substance, which completely prevented any return of the hernial protrusion, and allowed the patient to go about without any recurrence of his malady. Four months had elapsed at the time when M. Jobert related his case, and the cure was still as complete as at first; the inguinal canal was filled with a hard, solid cord; and there was no atrophy of the testicle.

Remarks.—When the sac is adherent to the surrounding parts—when the hernia is congenital—when the sac is distended with fluid, or is thickened or cartilaginous—M. Jobert recommends puncturing the sac at once with a trocar, without previously making an incision. The trocar is to be inserted perpendicularly at first, then obliquely upwards, and, when it has reached a certain depth, it is to be directed cautiously backwards so as to pucture the sac—the accomplishment of which process is known by the operator no longer meeting with resistance, and by his feeling the canula move about without obstruction in the empty sac. Having entered the sac, the pure tincture of iodine should be injected into it by means of a glass syringe—whereby we may be able to know how much fluid has been used. M. Jobert ordinarily injects one or two spoonfuls (*cuillerées*) of the tincture, but often much less. The quantity injected should always be in proportion to the size of the serous pouch. The injection should be suspended whenever we feel an obstacle to the entrance of the liquid. Instead of allowing the fluid to escape through the canula, M. Jobert withdraws it by means of the suction of the syringe.

When the sac is thin, movable, and easily displaced, Jobert exposes it by dividing the integuments with a bistoury, and *thereafter* punctures it with the trocar—*never with the knife.* In such cases he unites the lips of the external wound by means of twisted sutures.

What occurs after the operation? Immediately after the injected fluid is withdrawn, a new liquid begins to be thrown out within the hernial sac. After twenty-four or forty-eight hours have elapsed, the sac is filled with this fluid; it continues in this state for eight days, and after the first week it begins to diminish gradually and visibly in bulk. In proportion as the tumour diminishes it begins to acquire solidity, and becomes as firm as wood; nay, it eventually becomes as hard as bone or ivory.

M. Jobert affirms that this method by injection is superior to all the other operative procedures which have yet been devised for the radical cure of hernia, inasmuch as it is at once simple and harmless. M. Jobert, in conclusion, acknowledges that this operation is not invented, but merely revived, by him; inasmuch as M. Velpeau, in his *Annales de Chirurgie*, published ten years ago, first suggested the likelihood of injections of iodine proving beneficial for the radical cure of reducible hernia.—*Month. Journ. of Med. Sci.*, Dec., 1854; from *Gazette des Hôpitaux*, August 10, 1854.

OPHTHALMOLOGY.

46. *Employment of Chloroform in Operations on the Eyeball.*—Mr. Haynes Walton, in a clinical lecture delivered at the Central London Ophthalmic Hospital, made the following remarks on the amount of assistance that chloroform is capable of affording to an operator, and the mode in which it may enable

him to obtain a more successful result; how far that assistance is really needed, and when it is judicious to dispense with it.

"Most unquestionably in infancy," he remarked, "chloroform does afford very great assistance; for, without it, resistance on the part of the little patient is certain. You must have witnessed repeatedly the difficulty there is, in certain diseases, in unclosing the eye of an infant so as to obtain a satisfactory view; and surely you cannot forget the little battle that ensues, and the terrible screams that accompany and follow the attempt. The very diminutiveness of the organ, whereby there is much less room for the use of the fingers and for instruments, together with the great delicacy of the parts, demand the utmost exposure of the surface of the eyeball, with the greatest steadiness. In former years, the operation for congenital cataract was frequently postponed, because these desiderata could not be commanded; and I believe that occasionally in the present day their acquisition is considered impossible, and an operation delayed to the great detriment of the patient. I strongly suspect that the reason why the posterior operation for 'solution' has been so frequently advised in infancy, is because of the greater nicety required to perform the anterior one; and you will at once understand, that, without the paralyzing effect of chloroform, to retract the palpebræ, introduce a needle in cornea near the circumference, direct the point in the manner desired against the capsule of the crystalline lens and the lens itself, without touching the iris, or using injurious force, is no easy matter, or, at least, it may not be easy. True it is, that a modern lid retractor, of silver wire, or steel, removes some of the difficulty, but only a part, for the difficulty of securing the child, as well as other obstacles, still remain.

"Again, from what I hear, and indeed from what I see, it would appear that, before the use of the anæsthetic agent, the operation for congenital cataract was not unfrequently left unfinished. The capsule which blocked up the pupil was not always removed; and the operation, in any given case, was more often repeated, not merely from the erroneous idea that then existed, and unfortunately still does exist, about repeating needle operations; but also on account of the difficulty that frequently prevented the surgeon from carrying out his previous intentions.

"With children, and young persons in general, even when an operation is painless, there is an expectation of something worse than what is actually felt, and generally a deficiency of resolution, that renders it impossible for them to be sufficiently quiet without violent resistance, or the employment of mechanical restraint; and failures and mishaps are more commonly due than could be supposed, to the unsteadiness of the eye. If I had noted down all the instances that I have witnessed of foiled endeavours, they would form a large page in my note-book.

"I have alluded to the necessity of mechanical restraint to subdue the resistance of a refractory patient, and this is frequently very distressing to the friends. The public are becoming alive to the disadvantages of the plan, and frequently demand the use of chloroform. A lady called on me recently to make an arrangement for an operation on her child's eye, and at once asked if I used chloroform in such cases. I answered that I did, and, on requesting her reason for the question, she said, 'I have just left the house of Mr. ——, who has declined to employ it; he declared that, by rolling up my child in a tablecloth, and with the aid of two strong assistants, he could manage her, or the most unruly young lady. I told him that her timidity and highly nervous susceptibility made me dread the effect of such an ordeal on her mind.'

"Although there is no necessity to quit my own experience to furnish examples of the difficulty that there may be in operating when opposition is to be encountered, I shall borrow one which occurred to Mr. Wardrop, who had the disadvantage of practising when a calm sleep could not be exchanged for the violent struggles of a refractory patient. The quotation is from Dr. Mackenzie's work. 'A boy fifteen years of age, blind and deaf, at first yielded readily, and allowed himself to be placed and held on the table. The uneasiness, however, occasioned by the pressure necessary to keep the eyeball steady and the lids open seemed to overcome his resolution; and his exertions became so violent, that it was quite impossible to secure even his head. A second attempt was made the day following, more precautions being taken to secure him; but so violent were his exertions and cries, and so irascible did he become, that all present were glad to relinquish their posts. Some days after, a wooden box, the sides of which moved on hinges, was folded round his body, and fixed by circular ropes, and in this way, notwithstanding a powerful resistance, he was placed on a table and kept quite steady. Much difficulty was found in holding open the lids, and keeping the globe of the eye steady. As soon, however, as the needles touched the eye, he remained quite still, and his screaming ceased.' Mr. Wardrop and others have bled persons till they fainted, in order to obtain a passive state.

"I now pass to those operations on the adult eye, in which we may receive considerable assistance from the insensibility of the patient. It is evident that here there should be a distinction between such cases as require chloroform merely because of lack of moral courage, and those in which it is of positive advantage under any condition; as in the one we may leave the choice to the patient, in the other it is our duty to recommend it; as it is a fact that, with the fullest consent and greatest determination on the part of a patient, indeed, with a resolution that could endure a limb to be severed from the body without a groan or a cry, and with every desire to assist the operator, there are cases in which anæsthetic sleep may be advantageous. The majority of operations for artificial pupil, especially where the proceeding is complicated, and requires the use of more than one, or the re-introduction of the same instrument, falls under the latter category. An eye, for the most part, that requires this aid, is much damaged; the parts with which we have to deal are altered, and the vitreous humour is too frequently disorganized; so that we need the greatest steadiness of the eyeball, with long continuance of a given position, and an absence of much pressure. Now, the movements of the eyeball may be quite involuntary, and the eyelids will twitch, in spite of the most resolute will. But not the least disadvantage of consciousness is the compression that the straight and oblique muscles can and do exercise in such operations. When acting violently, they exert considerable influence; and the effect of such an agency, at such a time, is always hazardous, in several ways. Again, in many operations of general surgery, the sooner the manipulation ends, and the instruments are out of the body, the more certain is the result; this is doubly true of the eyeball. These remarks may be said to apply, in the main, when the eyeball is to be opened for the extraction of any body, be it capsule, animalcule, or any particle driven into it from without, when decided difficulty or intricacy is apprehended.

"I have purposely delayed till now to refer particularly to the formation of an artificial pupil in an infant or a child, because, after what I have said, you may the better appreciate the difficulty attending the execution of such a task, and the better recognize the assistance to be derived from a perfectly passive state. An infant that has lost its pupil from purulent ophthalmia, or any other cause, is not now doomed to darkness till the adult period, or, at least, need not be, as in past years. We can operate on the smallest eye, and the consent of the patient is not necessary.

"The extraction of a cataract may undoubtedly be better performed under the influence of chloroform, both when there is a certain deficiency of moral courage, and when there exist conformations of the eye that render the operation peculiarly difficult, and requiring more than usual dexterity. But as it is after the meridian of life, and often in the very aged, that extraction is needed, we should be careful not to use chloroform needlessly. In the early period of our existence, the risk of a fatal termination is exceedingly small. Not so, however, in the old and enfeebled, in whom the heart is so often diseased by being degenerated—a state which the most rigid scrutiny during life may fail to detect. Disease of the heart, however, has not been always found in those who have been killed by chloroform. Remember, too, that the operation is unattended with pain when well executed. Therefore, you should not use such an agent as a matter of routine, but withhold it when it may be dispensed with; and whenever you intend to employ it, exercise the most searching scrutiny as to its admissibility. We should not lightly place an aged person in a state so closely resembling apoplexy, that the most astute physician could not, at the moment, point out the difference.

"Timidity, and the accompanying restlessness of a patient, may render it impossible to operate successfully. I have seen this over and over, even under the hands of operators who have not been surpassed in this kingdom for self-possession and brilliancy in execution. On each occasion, the eye was either lost or much damaged, from the unavoidable results of operating against the patient's resistance. Here chloroform removes all difficulty. I cannot give a case more to the point than the following, which is reported from this Hospital in the 'London Practice of Medicine and Surgery,' in the *Medical Times and Gazette*.

"'A man, 65 years of age, with hard cataract in each eye, was brought up to the operating-room, for extraction to be performed on one of his eyes; but so great was his fright and agitation, that he could not be induced to keep quiet enough to allow his eye to be sufficiently open for the operation. He almost fainted when ascending the stairs, and required to be lifted by the porter. This was from sheer mental emotion, for he was neither feeble nor infirm. As there was no probability of his ever having self-command enough, Mr. Walton determined to give him chloroform. It was decided, however, not to do it on that day, for he had recently taken food, but on the following morning, when his stomach should be empty. This was carried into effect on Friday, and the operation was then easily and successfully performed.'

"It remains for me to mention those physical peculiarities of the eye which impede extraction, and which may be surmounted by the aid of chloroform. They are mainly those that present impediments to exposing and steadying the eyeball sufficiently to enable the cornea to be divided in an ample manner, such as a sunken eye, a narrow palpebral aperture, unusual prominence of the orbital ridge. In any of these states, more pressure with the fingers is generally required than the eye will bear. During stupor, the eyelids can be more widely extended, and the eyeball fixed with a lightness of touch that would, on account of the peculiarities, be insufficient during sensibility; there being, in fact, all the difference between involuntary resistance, however slight, and absolute quiet. Beyond this chloroform does not assist us.

"When a patient has tolerable fortitude, at all events whatever be his mental emotion, so long as he remains master of his will, and can direct his eye to the position desired, and there are not impediments to exposing his eyeball to the required extent, I would rather that he retain his senses during the operation, for then I believe that the crystalline lens is better started from its position, that it escapes more readily, and that the pupil is the more quickly restored to its natural state, and the iris less liable to prolapse after the terrible stretching it has received. Even supposing this not to be the case, and things are equal, is it not far better to save an aged person, if only from all the formality and distress of an inhalation. Is it not better to see a patient rise and walk to his bed or couch, rational and thankful, than for him to be removed, half-conscious, sick, miserable, and requiring careful and anxious attention, both on account of the constitutional effects of the chloroform, and the injury he might inflict on his eye. At a meeting of the Royal Medical and Chirurgical Society, on the 14th November, when a paper on an ophthalmic subject was read, Mr. Fergusson asked to what extent chloroform was employed in operations on the eye, meaning the eyeball, and with what success. Mr. Dixon said that a patient might not vomit soon after the inhalation of chloroform, but he might remain twelve or twenty-four hours in a sickly, squeamish state, with but little appetite for food. This was more injurious than vomiting, for it was of the greatest importance, especially in old persons, that the nutrition of the patient should be well maintained, and the eye kept perfectly at rest.

"I have several times calmed the fears of elderly persons on whom I was about to perform extraction, and dissuaded them from inhaling chloroform, and in every instance I have been thanked for my advice. I have been asked repeatedly, even by patients, if the anæsthetic sleep does not give confidence to the operator, and enable the operation to be the better done. I can only say, that if, in any given instance, this is likely to be true, the timid surgeon had better avail himself of every admissible assistance that is likely to restore sight to his patient. He had better narcotize him, and, if needs be, stimulate himself.

"I shall not enter into the details of preparing a patient for taking chloroform, the mode of giving it, nor the after treatment. This I have dwelt on elsewhere; but I will tell you—be certain of insuring complete insensibility before you begin to operate, that all the steps of the operation may be over before the patient is sensible, for you can have no greater misfortune than for him to awake before the termination, and to commence struggling. There is a particular point in the after treatment that must be attended to, the neglect of which has cost several eyes; and this has induced me to say in my work on the Eye: 'Except the operation for the extraction of cataract, or the division of the cornea to a like or nearly equal extent, for any other purpose, there is no operation on the eye in which well-founded objections exist to the previous use of chloroform or ether as anæsthetic agents. In the exceptions mentioned, the objection arises from fear of vomiting, and the loss of the vitreous humour. It is true, that vomiting is but an occasional effect of the use of these agents, and it can nearly always be prevented by emptiness of the stomach previous to inhalation, and which is secured by enjoining a strict fast for four or five previous hours; but, after every precaution, vomiting may occur, or severe retching, which is equally injurious.'

"I wrote this from instances that had come under my notice, and I dreaded to employ the chloroform. Subsequent experience convinced me that all necessary precautions had not been used. If the eyelids are carefully retained together with court-plaster, there is little if any ground for misapprehension, except there be that degree of vomiting which could perhaps arise only under an absence of those preliminary precautions to which I have alluded. In the case above quoted from 'The London Practice of Medicine and Surgery,' delirium tremens came on, and, in spite of the violent agitation of the man, during which the head was tossed much about, the success of the operation was not interfered with, because the eyelids were plastered together, and the eyeball protected by a guard made of wire and cloth."—*Med. Times and Gaz.*, Jan. 27th, 1855.

47. *Opacities of the Vitreous Humour.*—Opacities of the vitreous humour, of every variety of form, belong to the commonest ophthalmoscopic discoveries in amblyopic affections. Whence do they arise? Dr. Graefe believes their causes are manifold; but he draws particular attention to one, namely, intra-ocular hemorrhages. A sudden cloud, sometimes of reddish hue, may obscure vision wholly or in part, or spots of every variety of form may float before the sight. In some cases there is complete absorption of the extravasated mass. In most instances, however, filamentous, or flocky dark spots, remain. The commonest forms are punctated, filamentous, membranous, flocky, or irregular. The first are not easily overlooked. The causes of intra-ocular hemorrhage lies, doubtless, in disease of the coats of the bloodvessels; for the contents of the globe are constantly under a state of pressure, and, therefore, the commonly exciting causes of hemorrhage are removed. The chief source is sclerotico-choroiditis posterior, which leads to chronic inflammation and distention of the capillaries in the back part of the globe. But intra-ocular hemorrhage may ensue from simple hyperæmia of the choroid, dependent upon some unknown change in the strength of the walls of the vessels.—*Med. Times and Gaz.*, Feb. 17, 1855, from *Archiv. für Ophthalmologie.*

48. *Effusion of Blood into the Orbit.*—A labouring man, aged 19, consulted Dr. Graefe for double vision of four days' duration. A fixed expression of the left eye immediately struck the attention; its axis of vision was either in a state of unnatural convergence or divergence with the right eye, in various movements of the head. More accurate investigation convinced the author that there was complete paralysis of the musculus rectus inferior, musculus rectus superior, and musculus obliquus superior; partial paralysis of the musculus rectus internus, musculus rectus externus, and of the nervus opticus; so that the func-

tions of four nerves were affected—namely, the N. oculo-motorius, N. trochlearis, N. abduceus, N. opticus. There were no cerebral symptoms whatever. Taking this circumstance into consideration, as well as the fact of the suddenness of the attack, Dr. Graefe diagnosed effusion of blood behind the bulb of the eye, with pressure on the nerves.

He also relates two cases of suddenly excited exophthalmus, from caries of the orbit; and the *post-mortem* observations on a case of paralysis of the oculo-motor nerve. The corresponding optic nerve was shrunken up to the chiasma; the oculo-motor nerve one-half thinner than the opposite; but there were interspersed opaque white blots in its tissue, which were seen to be caused by thickening of the neurilemma. In the left corpus striatum there was a softened spot. The muscles of the globe were atrophied.—*Ibid.*

49. *New Ophthalmoscope.*—After having reviewed the different ophthalmoscopes of MM. Helmholtz, Follin and Nachet, Ruette, Jaeger, Jr., and Coccius, M. A. Anagnostakis describes that which he has invented. This instrument consists simply in a small concave mirror, round, and of a diameter of one inch and a-half, of a focal distance of four inches and a-half; the surface, tinned over, is covered by a plate of blackened copper. The centre of the mirror is pierced by a widening aperture of two lines (four millimetres) diameter. A little ivory handle serves to hold the instrument.

The patient, whose pupils have been previously dilated by a solution of the neutral sulphate of atrophine, is seated in a darkened chamber by the side of a table, on which is put a good lamp deprived of its globe. The lamp should be as close as possible to the patient, and the flame brought to a level with the eye about to be examined. The surgeon, seated in front of the patient, holds the instrument, the reflecting surface turned towards the eye to be examined, the posterior surface applied to the eye of the examiner in such a way that the eye can look through the central aperture of the mirror.

This being done, the surgeon turns the instrument a little inwards; a luminous reflection is cast upon the diseased eye. On withdrawing it a little, he sees the reflection growing smaller and smaller, until it becomes oblong, constricted, and very brilliant.

A look is then taken obliquely, through the hole in the mirror, into the eye subjected to exploration. It is in this situation, a little modified, according to circumstances, that one perceives the different alterations in the retina and in the media of the eye.

The author, who has explored in this manner a great number of diseased eyes alone or in concert with M. Desmarres, has obtained the following important results:—

1. *Exploration of the Crystalline Lens.*—Upon three patients, supposed to be suffering from amblyopia, M. Desmarres ascertained that there were three incipient cataracts, which had escaped observation. The author affirms that every opacity can be thus detected.

2. *Exploration of the Vitreous Humour.*—In three patients suffering from different degrees of troubled vision, M. Anagnostakis has observed corpuscles of a more or less deep brown colour, of different forms, and of variable volume seated in the vitreous humour. Are they inflammatory effusions, or rather traces of former hemorrhages. In a patient affected with synchisis, M. Desmarres has seen these corpuscles replaced by crystals of cholesterin.

3. *The Retina.*—The instrument has revealed injections of the vessels of the retina and sub-retinoid ecchymoses. In one patient there was a true sanguineous effusion under the whole retina, apparently from former hemorrhages. Three times did M. Anagnostakis diagnose sub-retinoid dropsies.

Finally, M. Anagnostakis thinks that in one patient he saw thickening of the retina.—*Lond. Med. Times and Gaz.*, from *Gazette Médicale de Paris*, Jan. 6, 1855.